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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,055	04/13/2007	Harry K. Charles JR.	1990-SPL	6571
<div>7590 03/25/2010</div> <div>Francis A Cooch Deputy General Counsel (Patents) The Johns Hopkins University Applied Physics Labor 11100 Johns Hopkins Road Mail Stop 7-156 Laurel, MD 20723-6099</div>				
EXAMINER				
SODERQUIST, ARLEN				
ART UNIT		PAPER NUMBER		
1797				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/575,055

Applicant(s)

CHARLES ET AL.

Examiner

Arlen Soderquist

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-12 and 16-31 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 13-15, 30 and 31 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date ____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

1. Claims 9 and 18-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 9 and 31 a dithiocarboxylic ester does not have antecedent basis in either of claims 1 or 24. In claim 18 it is not clear if a "star" molecularly imprinted polymer has any structural meaning or can simply be read as a molecularly imprinted polymer.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 11, 16-18 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Rittenburg (US 5,492,444). In the patent Rittenburg teaches marking of products for various reasons including establishing the identity source or fate of the product. In general, the invention features a method of marking a product for identification in which a marker, composed of a print molecule, print molecule analogue, or molecularly imprinted molecule (MIP), are added to the product and subsequently measured in a specific binding assay. the patent also teaches kits for performing the assay including detecting means. Preferably, the detecting means is a detectably labeled print molecule or analogue which specifically binds the MIP. Preferred detectable labels include enzymes, chemiluminescens, and chromophores as enumerated in column 2, lines 41-58. Column 3, lines 8-13 teach that in preferred embodiments, the molecularly imprinted molecule comprises a homo- or hetero-polymer of functional monomers selected from the group consisting of acrylic acid, methacrylic acid, ethylene dimethacrylate, vinyl pyridine, sulfonic acid, vinylimidazole, and itaconic acid. Column 3, lines 21-26 define "molecularly imprinted molecule" or "anti-print MIP" to mean any macromolecule that has been prepared by cross-linking subunits in the presence of the print molecule such that the resulting molecule retains an imprint of the print molecule and will subsequently specifically bind the print molecule. Column 10, lines 9-20 and example 1 teach specifics on how this is accomplished. Column 3, lines 27-50 define "marking a product for identification" to mean associating a marker with a product so that the source, identity, or other information about the product including production date, batch, and shelf-life may be established. Identification of a marked product can also facilitate monitoring of

manufacturing or other processes and product monitoring for security or regulatory purposes. Column 3, lines 51-54 define "physical characteristic of a marker" to mean a characteristic inherently associated with a marker, such as color, fluorescence, luminescence, density, weight, and optical activity. the paragraph bridging columns 5-6 teach various solid products that can be marked. Column 7, lines 24-46 teach that the marker can be incorporated into coatings which are then applied to the surface of a product to be marked. Exemplary coatings include paints, varnishes, plastic or rubber-based coatings, as well as other coatings well known in the art. These coatings can be applied to credit cards, pressure sensitive labels, security labels, holograms, product packaging, or other visual mark of authenticity (e.g. a trademark or logo). The marker-labeled coatings can be applied directly to the surface of products (e.g. electronic equipment, appliances, photographs, glass, metal, and plastic). Detection of the marker in the coating may be detected by directly assaying the surface of the marked product in a reversible, non-destructive manner through reaction with a detectably labeled specific binding member specific for the marker in the coating. Once the marker is visualized on the surface of the product, the specific binding member may be dissociated from the marker by various methods well known in the art including changes in ionic strength, polarity, or pH. Preferably, the dissociation will be performed by a method which preserves the marker intact to allow for future visualizations. Column 8, lines 55-62 teach that specific binding members are molecules which substantially specifically bind to the marker to be detected in a sample of a marked product. Exemplary specific binding member-marker pairs include MIP-print molecule, MIP-print molecule analogue, print molecule-MIP, and print molecule analogue-MIP. The specific binding member or members are desirably bound on a solid support.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claims 2-7 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rittenburg as applied to claims 1 and 18 above, and further in view of Soini (US 4,374,120). While Rittenburg teaches the preferred detection method is a fluorescent one, the use of a lanthanide marker is not taught.

In the patent Soini teaches an improved method of determining the nature of a substance by fluorescence spectroscopy wherein a fluorescent marker is coupled to the molecules of the substance comprises the use of a marker having a longer period of fluorescence than those of possible sources of noise and by employing an exciting radiation pulse of short duration so that the fluorescence of the marker is detected after the objectionable sources of fluorescence have ceased; the marker including a fluorescent lanthanide chelate complex. Column 1 teaches the problems associated with background fluorescence while column 2 teaches the ability to overcome these problems using lanthanide chelate complexes. In particular column 2, lines 54-63 teach several beta-diketones used including thenoyltrifluoroacetone (TTA), benzoyltrifluoroacetone (BTA) and 1- or 2-naphthoyltrifluoroacetone (1-/2-NTA). Column 3, teaches the need to attach these markers to a binding group.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the lanthanide markers of Soini into the Rittenburg methods and compositions because of the ability to overcome the problem of background fluorescence as taught by Soini.

6. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rittenburg as applied to claims 1 and 18 above, and further in view of Lostumo (US 4,923,908). Rittenburg does not teach the types of polymers used to coat things like electronic devices.

In the patent Lostumo teaches epoxy resin compositions useful as an encapsulant. Column 1, lines 14-31 teach the use of epoxy resin compositions for encapsulating electronic devices. Column 3, lines 48-67 define "encapsulate" to mean to completely saturate and engulf the device to protect it from air with an epoxy thermoset composition. This protection may be

achieved, for example, by coating, covering, enveloping, potting, or the like. In one typical encapsulating procedure, a relatively thin coating is provided over a printed circuit board. Thus, the epoxy compositions are useful for encapsulating any of a variety of electrical and electronic devices or apparatus.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the MIPs of Rittenburg into the epoxy coatings for electronic devices taught by Lostumo because of the recognized use of epoxy coatings on electronic devices as taught by Lostumo and the teaching of incorporating the MIPs into coating composition that are applied to electronic devices as found in Rittenburg.

7. Claims 12 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rittenburg as applied to claims 1 and 18 above, and further in view of Weiss (US 5,990,479). Rittenburg teaches the detectable group attached to the group that binds to the MIP, but does not teach the chain including the alkene group structure.

In the patent Weiss teaches luminescent markers and means to link them to a specific binding group. Column 8 has a table showing various linking agents all of which have the claimed molecular chain structure. The paragraph following the table teaches polymerizable linking agents as well.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the linking agents of Weiss into the Rittenburg marker because of its known ability to link a detectable group to a binding group as shown by Weiss.

8. Claims 8 and 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 9 and 30-31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The following is an examiner's statement of reasons for allowance: the prior art does not teach or fairly suggest the chain transfer moieties or the use of a mask to selectively remove some of the taggant molecules.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The newly cited art relates to using molecularly imprinted materials to identify lubricating oil.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose telephone number is (571)272-1265. The examiner can normally be reached on Monday-Thursday and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571) 272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arlen Soderquist/
Primary Examiner, Art Unit 1797